



BOARD OF DIRECTORS

Timothy Jackson
President

Lester Abocager
Vice President

Gregory Barnhart
Secretary

Stephen Gough
Treasurer

Kathy Guston
Robert S. Davis

J. Allison DeFoor
John E. Eubly

Mike Gaudin

Robert W. Hopkins

Allen N. Jinks, Jr.

Alex M. Jernigan

Ralph B. Johnson

Chris Kiser

James C. Nicholas

Stella Elia Pritchard

Victoria J. Schinkel

C. Allen Watts

Susan Summerville Wiles

Nathaniel P. Reed
Chairman Emeritus

John M. DeGrove
President Emeritus

Charles G. Fairson, AICP
Executive Director

March 9, 2005

Commissioner Cliff Thael
Chairman
Leon County Commission
301 S. Monroe Street, 5th Floor
Tallahassee, FL. 32301

RE: Request to have Leon County join as a sponsor to the May 2005 workshop entitled, "Solving Water Pollution Problems in the Wakulla Springshed of North Florida, Science and Technology at Work for a Better Florida"

Dear Chairman Thael:

1000 Friends of Florida and the Florida Hydrogeology Consortium with the assistance of the Florida Geological Survey have been working to develop a workshop directed at examining water pollution problems in the Wakulla Springshed, and how and where science and technology may be useful to address springshed protection needs. The workshop is scheduled for May 12th and 13th at the Center for Professional Development in Tallahassee with a field trip within the springshed to occur on May 11th. With this letter we are asking that Leon County join us to sponsor this workshop.

The purpose of this workshop is to present an overview of the broad and growing scientific evidence linking water quality decline at Wakulla Spring with land use practices in the region. Essentially, a growing body of science and visible changes to the spring are indicating that development within the region (inclusive of Wakulla County, Leon County and even north into Georgia) impacts the spring and the levels of technology presently being used to protect the spring are falling short of the need. The workshop is also intended to be forward looking and cooperative relative to planning for solutions that will help ensure Wakulla Springs exists as a healthy ecosystem and local and statewide asset long into the future.

The workshop will convene scientific and engineering experts to present the current understanding of groundwater and surface water flow patterns through the Woodville Karst Plain, the sources of pollution to Wakulla Springs, and explore the applicability and effectiveness of technologies as solutions to the problems. An important goal of this workshop is to disseminate this knowledge to local decision makers and staff and to encourage cooperative, proactive governmental planning and investment in water resource protection in the basin. I have attached a preliminary agenda that provides a good idea of the scope of the workshop.

1000 FRIENDS OF FLORIDA

Post Office Box 5928

Tallahassee, Florida

32304-5948


Telephone (850) 222-6277

Fax (850) 222-1117

Sponsorship involves minimal resources on the County's part. Currently, we have the following sponsors: Florida Hydrogeology Consortium, 1000Friends of Florida, Florida Department of Community Affairs, Wakulla County, and the Florida Geological Survey and the City of Tallahassee. Sponsorship is of nominal cost. Really, whatever you might be able to muster would help defray our costs. As an example, the City estimates it will provide a contribution sufficient to cover the cost of two of the workshop's breaks and will also provide a person to help record notes and take pictures of the session. We hope the County might also sponsor this workshop and provide a similar level of support. Nevertheless, the important thing is that we have all of the important stakeholders within the springshed cooperating together to sponsor and participate in this workshop.

I look forward to hearing from you or your staff, and hope the County will join us in May in our efforts to understand, plan and institute fiscally sound actions to protect this wonderful resource. You can contact me at 222-6277 (ext. 105) or at dpennington@1000fof.org.

Sincerely,


Dan Pennington
1000Friends of Florida

\$500.00
adequate

Cc: Andrea Simpson, Assistant to the County Administrator
Theresa Heiker, Leon County Stormwater Management



Solving Water Pollution Problems in the Wakulla Springshed of North Florida

Science and Technology at Work for a Better Florida

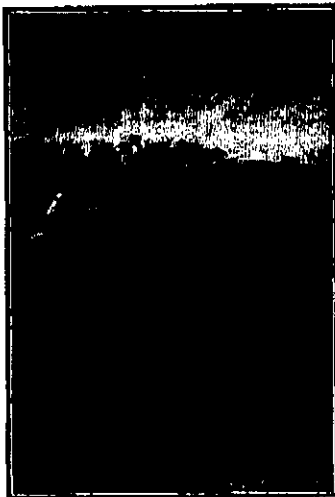
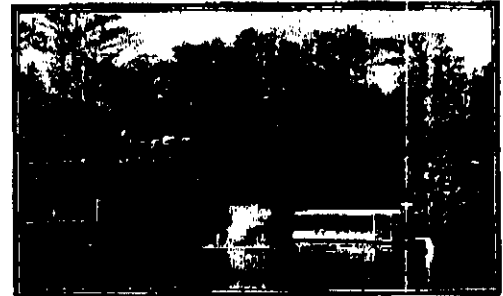


Hydrogeology Workshop - 2005

FSU's Turnbull Center for Professional Development
555 West Pensacola Street • Tallahassee, FL 32306

May 12-13 (Thurs – Fri), 2005

Registration Fee: \$50.00



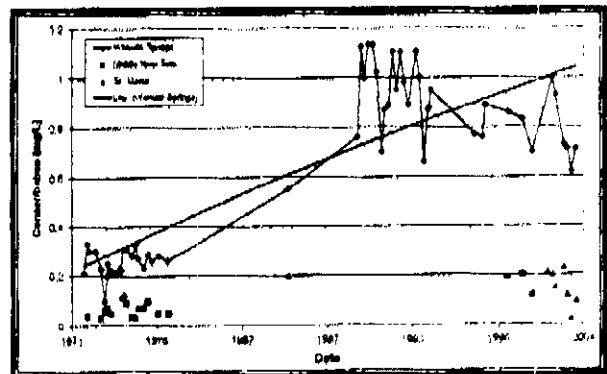
Problem Overview

Wakulla Spring is the third largest spring in Florida but perhaps the best known. The spring is the centerpiece of Edward Ball Wakulla Springs State Park, considered to be the crown jewel of the Florida state parks. It discharges an average of 250 million gallons of water per day from the Floridan aquifer to form the headwaters of the Wakulla River. It has the largest range of discharge of any spring in Florida, ~80 million gallons per day at low stage and > 1 billion gallons per day at high stage. The sheer size of the spring is uniquely impressive being several hundred feet across and more than 100 feet deep. The spring basin contains the only entrance to one of the largest underwater caves in the world having more than 10 miles of mapped passages that extend both north and south from the spring. The park features glass bottom boat rides that enthrall visitors every year when the water is clear with views of the basin and cave entrance. Wakulla Spring is also a national cultural treasure being the site of ancient Mastodon bones and Indian artifacts, and the setting for classic movies such as the original Tarzan series and the Creature from the Black Lagoon.

Unfortunately, water quality in Wakulla Spring has been in decline for more than a decade due to rising nitrate levels, algae blooms and a growth explosion of hydrilla that chokes the spring basin and kills or drives away native species, including the apple snail and limpkin. The decline in water quality and clarity has kept the glass bottom boats at the docks and tourists and cave explorers waiting for clear water that seldom comes. Park attendance has dropped in recent years by approximately 20,000 visitors per year.

Purpose

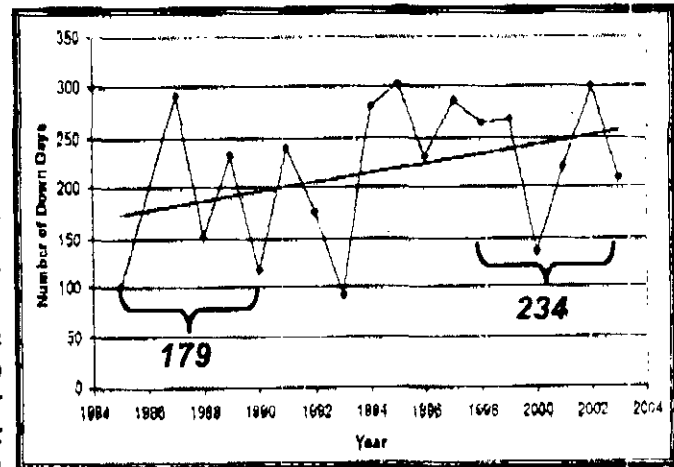
The purpose of this workshop is to present an overview of the broad and growing scientific evidence linking water quality decline at Wakulla Spring with land use practices in the region. The workshop will convene scientific and engineering experts to present the current understanding of groundwater and surface water flow patterns through the Woodville Karst Plain, the sources of pollution to Wakulla Springs, and explore the applicability and effectiveness of advanced technologies as solutions to the problem of degrading spring water quality and clarity. The primary goal of this workshop is to disseminate this knowledge to local decision makers and encourage cooperative proactive governmental investment in water resource protection in the basin.



Measured increase in nitrate levels measured in the
Wakulla Spring basin between 1971 and 2004

General Format

The workshop will convene as a plenary session on Thursday morning, May 12. Scientists currently engaged in research projects within the Woodville Karst Plain will give several presentations on groundwater and surface water flow patterns and sources of pollution in the Woodville Karst Plain. Afterward, the group will break into three discussion groups focused on the science and technologies specific to abating the three primary sources of nitrate loading in the basin: storm water, septic systems, and waste water treatment facilities. The discussion sessions will each contain five panelists who will give short presentations on the problems from their perspective and a moderator who will guide subsequent discussions. The goal for each session will be to build a consensus of opinion and recommendations for the best course of action to solve the problems. On Friday morning, May 13, the plenary session will reconvene and the moderators will present to the group as a whole the conclusions and recommendations derived in each session. The workshop will then conclude with lunch and a summary by the emcee.



Increasing number of days in a given year that the glass bottom boats cannot run at Wakulla Spring

A video luncheon presentation on Thursday, May 12 on exploring Wakulla Cave by members of the Woodville Karst Plain Project Cave Divers will be given. A half-day field trip will be offered on Wednesday, May 11, to provide an overview of the hydrogeologic setting and sources of pollutions. Decision makers and their staff are encouraged to attend.

DRAFT

2005 HC Workshop: Solving Water Pollution in the Wakulla Springshed ..

Plenary Session – Scientific Overview

This part of the workshop will focus on the scientific work that has established the connection between land use practices in the Woodville Karst Plain and water quality in the springs. Six presentations will be given designed to synthesize the broad and growing body of research that has been recently conducted in the Woodville Karst Plain. The luncheon presentation on the exploration of Wakulla cave will follow this session. Presenters include:

Emcee: Mr. James Stevenson – Florida DEP Retired, Former Chairman of the Florida Springs Task Force
Joe Hand, FDEP Water Resources

Tom Pratt – Hydrogeologist Northwest Florida Water Management District

Hal Davis – Hydrogeologist U.S. Geological Survey

Timothy Hazlett – President Hydrogeology Consortium, President Hazlett-Kincaid Inc.

Todd Kincaid – Communications Officer Hydrogeology Consortium, Vice-President Hazlett-Kincaid Inc.,

Science Director Global Underwater Explorers

Sean McGlynn – President McGlynn Laboratories

Casey McKinlay – Director Global Underwater Explorers-Woodville Karst Plain Project

Discussion Session 1: Storm Water Runoff

This panel will address water quality impacts, on the Wakulla springshed, stemming from non-point source discharge into the basin. Specific topics and questions may include, but not be limited to, correlating the volume of discharge with normal seasonal variation as well as during tropical storm events, sources of the discharge and the predominant land use associated with these sources, relationship between land use and the quantity and quality of runoff; especially as it relates to nutrient loadings; with particular attention focused on the role of phosphorus vs.. nitrate concentrations as triggers to eutrophication. The panel will review and evaluate current storm water runoff management practices and provide a menu of field-tested or new and innovative practices that may provide a more environmentally-sound and/or cost effective alternatives. Panelists will include:

Moderator: Jon Arther, Florida Geologic Survey

Panelist 1 - Eric Livingston – Florida DEP

Panelist 2 – Marty Wanaleista – University of Central Florida, Florida Stormwater Academy

Panelist 3 – John Cox or John Buss – City of Tallahassee Stormwater Management

Panelist 4 – Theresa Heiker – Leon County Stormwater Management

Discussion Session 2: Septic Systems

This panel will address the effectiveness of septic systems as a waste water treatment method, the prevalence of these systems in the Wakulla springshed, density of systems per land area, the suitability of local soils as drain fields, mounding as an alternative to suitable soils for effective drain field operation, multi-family and commercial facilities vs.. single dwelling systems, aerobic vs.. anaerobic systems and the ideal or recommended protocols for system monitoring and maintenance. The panel will also discuss the latest innovations in the manufacture and installation of systems and provide a comparison between these systems and localized or regional sewage treatment plants from the environmental, public health and economical perspectives. The panel will finally review and evaluate current practices of domestic wastewater management in this springshed and provide a menu of best management practices that may reduce current detrimental impacts on the watershed. Panelists will include:

Moderator: Rodney Dehan, Florida Geologic Survey

Panelist 1. - Mark Hooks, FDOH

Panelist 2 – Eberhardt Roeder - FDOH

46

DRAFT

2005 HC Workshop: Solving Water Pollution in the Wakulla Springshed ...

- Panelist 3 – Alex Mahon – Leon County Health Department
- Panelist 4 – Brian Crawford, Wakulla County Health Department
- Panelist 5 – Donnie Sparkman, Planning Director, Wakulla County

Discussion Session 3: Wastewater Treatment Facilities

Using recent studies, current and historical water quality monitoring, permitting and operational data; this panel will evaluate the effectiveness of existing wastewater treatment facilities in maintaining the ecological health and integrity of the Wakulla springshed. The panel will discuss specific topics such as the level of treatment needed before spray irrigation, secondary, tertiary or advanced waste water treatment (AWT), ideal rates of application, ideal crops for uptake of nutrients, seasonal variations and the role played by the underlying karstic geology in the successful operation of spray fields or other land application methods for treating domestic wastewater. As with the other two panels; this panel will conclude by providing a menu of alternative practices that might be considered by decision makers, within the local and State entities, responsible for managing this community's wastewater and protecting its natural resources. Panelists will include:

- Panelist 1 Dick Fancher, FDEP – Northwest District Office Director or Kart Vaith, CDM, Inc
- Panelist 2 Mark Sees, City of Orlando Utilities
- Panelist 3 Richard Drew, FDEP Wastewater Facilities
- Panelist 4 Ellie Whitney, Friends of Wakulla
- Panelist 5 Lynne Putnam, City of Tallahassee

Field Trip (May 11th): Groundwater Flow & Sources of Water Pollution in the Wakulla Springshed
Join some of the leading researchers on groundwater and surface water flow in the Woodville Karst Plain for a half-day tour of the Wakulla springshed including visits to Tallahassee's southeast spray field, Lake Munson, Ames Sink, Emerald and Cherokee Sinks, and Wakulla Spring. Discussions will focus on recent research that has established flow paths and velocities between the springs and critical pollutant receptors as well as the significance of the Leon Sinks and Wakulla Cave systems to groundwater flow patterns in the basin. Field trip leaders will include:

- Dr. Todd Kincaid
- Dr. Timothy Hazlett
- Ms. Sandy Cook – Florida DEP, Manager Edward Ball Wakulla Springs State Park

DRAFT

2005 FIC Workshop: Solving Water Pollution in the Wakulla Springshed ...

Tentative Agenda

May 11: Field Trip - Groundwater Flow & Sources of Water in the Wakulla Springshed

Time	Objective / Discussion Topics
0830 - 0900	Field Trip Overview and Depart from Wakulla Springs Lodge
0900 - 0920	Drive to Lake Munson
0920 - 0940	Discussion at Lake Munson: <i>Tallahassee Storm Water Runoff</i>
0940 - 1000	Drive to Tallahassee Spray Field
1000 - 1030	Discussion at Spray Field: <i>Nitrates and Nitrate Loading</i>
1030 - 1050	Drive to Ames Sink
1050 - 1120	Discussion at Ames Sink: <i>Tracing the Flow</i>
1120 - 1140	Drive to Cheryl & Emerald Sinks
1140 - 1210	Discussion at Emerald Sink: <i>The Leon Sinks Cave System</i>
1210 - 1230	Drive to Cherokee Sink
1230 - 1250	Discussion at Cherokee Sink: <i>Importance of Sinkhole Restoration</i>
1250 - 1300	Drive to Wakulla Springs State Park Lodge
1300 - 1400	Lunch at Wakulla Springs Lodge
1400 - 1430	Discussion at Wakulla Spring Vent: <i>Sources of Wakulla's Water</i>
1430 - ??	Optional Jungle Boat Cruise on the Wakulla River

*Lunch, transportation, and field trip guidebook will be provided***May 12: Workshop Day 2 - Florida Karst Plain**

0700 - 0800	Registration and Continental Breakfast
0800 - 0815	Opening Remarks by Emcee: Jim Stevenson
0815 - 0840	PROTECTING WATER QUALITY IN WAKULLA SPRINGS WITH NUTRIENT CRITERIA AND THE TMDL PROCESS <i>Mr. Joe Hand - FDEP, Environmental Manager</i>
0840 - 0850	Questions & Answers
0850 - 0915	Nitrates in the Woodville Karst Plain <i>Mr. Thomas Pratt - Hydrogeologist - Northwest Florida Water Management District</i>
0915 - 0925	Questions & Answers
0925 - 0940	Break
0940 - 1005	Groundwater and Surface Water Flow in the WKP <i>Todd R. Kincaid, Ph.D. - Hazlett-Kincaid, Inc. & Hydrogeology Consortium</i>
1005 - 1030	The Leon County Aquifer Protection Study <i>Sean McGlynn, Ph.D. - McGlynn Laboratories</i>
1030 - 1040	Questions & Answers
1040 - 1055	Break
1055 - 1120	Modeling Flow & Transport from the Tallahassee Spray Field <i>Hal Davis - U.S. Geological Survey</i>
1120 - 1130	Questions & Answers
1130 - 1155	Toward a Comprehensive Karst Watershed Model as a Planning and Decision Support Tool <i>Timothy J. Hazlett, Ph.D. - Hazlett-Kincaid, Inc. & Hydrogeology Consortium</i>
1155 - 1205	Questions & Answers
1205 - 1300	Lunch
1300 - 1330	Luncheon Talk: Exploring the Secrets of Wakulla Spring <i>Casey McKinlay - Global Underwater Explorers / Woodville Karst Plain Project</i>

DRAFT

2005 HC Workshop Solving Water Pollution in the Wakulla Springshed

May 12: Workshop Day 1 - Discussion Sessions			
Time	Session #1 Storm Water Runoff Moderator: Jon Arthur	Session #2 Septic Systems Moderator: Rodney Dehan	Session #1 Wastewater Treatment Moderator: Rick Copeland
1330 - 1350	Panelist 1 - Eric Livingston	Panelist 1 - Mark Hooks	Panelist 1 - Richard Drew
1350 - 1410	Panelist 2 - Theresa Heiker	Panelist 2 - Eberhard Roeder	Panelist 2 - Ellie Whitney
1410 - 1430	Panelist 3 - Jon Cox/	Panelist 3 - Alex Mahon	Panelist 3 - Lynne Putnam
1430 - 1450	Break		
1450 - 1510	Panelist 4 - Marty Wanielsta	Panelist 4 - Brian Crawford	Panelist 4 - Mark Sees
		Panelist 5 - Donnie Sparkman	Panelist 5 - Kart Vaith
1530 - 1545	Break		
1545 - 1700	Moderated Discussions	Moderated Discussions	Moderated Discussions
1700 - 1800	<i>Evening Mixer: Sponsored by Some Firm, USA</i>		

May 13: Workshop Day 2 - Discussion Sessions			
0730 - 0830	Registration & Continental Breakfast		
0830 - 0840	Plenary Session - Re-opening Remarks by Emcee: Jim Stevenson - Disperse to Discussion Sessions		
	Session #1 Storm Water Runoff Moderator: Jon Arther	Session #2 Septic Systems Moderator: Rodney Dehan	Session #1 Wastewater Treatment Moderator: Rick Copeland
0840 - 10:45	Moderated Discussions Formulate Conclusions	Moderated Discussions Formulate Conclusions	Moderated Discussions Formulate Conclusions
1045 - 1100	BREAK		
1100 - 1105	Reconvene Plenary Session: Emcee		
1105 - 1120	Conclusions & Recommendations from Session 1: Storm Water Runoff Jon Arther		
1120 - 1135	Conclusions & Recommendations from Session 2: Septic Systems Rodney Dehan		
1135 - 1150	Conclusions & Recommendations from Session 3: Wastewater Treatment Facilities Rick Copeland		
12:00 - 1:45	Lunch and report by peer reviewers of the sessions		
	Closing Remarks by Emcee: Jim Stevenson		

Solving Water Pollution Problems in the Wakulla Springshed of North Florida

Science and Technology at Work for a Better Florida

Hydrogeology Workshop - 2005

FSU's Turnball Center for Professional Development
555 West Pensacola Street • Tallahassee, FL 32306

May 12-13 (Thurs - Fri), 2005 - Field Trip May 11th

Registration Fee: \$50.00



Mail-In Workshop Registration Form

First Name:	Last Name:
Affiliation:	Check One: Government <input type="checkbox"/> Private Sector <input type="checkbox"/> Academic <input type="checkbox"/>
Business Street Address:	
Business City:	
Business State:	
Business Postal Code:	
Business Phone Number:	
Email Address:	

For information please contact Dan Pennington at: (850) 222-6277 or email:
dpennington@1000fof.org.

To register fill in the above information and send registration fee to:

1000Friends of Florida

Attention: Kathleen Morris - Wakulla Springshed Workshop

P.O. Box 5948

Tallahassee, Florida 32314-5948

Registration can also be completed secure online by credit card by going to:
www.1000fof.org